

## Synchronic Chain Shift (counterfeeding) Examples

This is a collection of known or alleged instances of the phonological phenomenon variously known as

- "counterfeeding"
- "synchronic chain shift"
- "underapplication"

Some are taken from secondary literature; others were found by flipping through reference grammars in the library looking for telltale phrases like "This rule does not apply to long vowels created by Rule 27". **Contributions are welcome, and contributors will be acknowledged.**

This list excludes chain shifts that have been reported to have a highly restricted morphological distribution (e.g., the examples discussed by Benua 1997). It includes some chain shifts whose existence is inferred via the Optimality-Theoretic assumption of "richness of the base" (Prince & Smolensky 1993:191): If all surface [y] are derived from underlying /x/, then underlying /y/ must surface as some unknown [z]. In reference grammars this shows up as "All surface geminates are derived by Rule 6".

The shorthand "X→Y→Z" is used to abbreviate the statement that underlying /X/ becomes surface [Y], while underlying /Y/ becomes surface [Z].

Language	Mapping	Sources
Barrow Inupiaq	$\hat{g}l \rightarrow igl \rightarrow ig\text{¥}$	McCarthy 2002, Kaplan 1981 <i>Phonol. Issues in N. Alaskan Inupiaq</i>
Basaa	$E \rightarrow e \rightarrow i$ $\text{ç} \rightarrow o \rightarrow u$	Schmidt 1996 <i>Phonology</i>
Bdull Arabic	$\#VCC\# \rightarrow \#\text{VCiC}\# \rightarrow \#VC\text{'iC}\#$	Bani-Yasin & Owens 1984 §1.3.e
Bedouin Arabic	$badw \rightarrow badu \rightarrow bidu$	McCarthy 1999 citing Al-Mozainy 1981
Bedouin Arabic	$gabr \rightarrow gabur \rightarrow gibr$	McCarthy 1999
Bedouin Hijazi Arabic	$a \rightarrow i \rightarrow \emptyset$	Kirchner 1996 citing Al-Mozainy 1981 <i>Vowel Alternations...</i>
Catalan	$nt\# \rightarrow n\# \rightarrow \#$	Boersma 1999 ROA 369, Wheeler 1979, Mascaró 1978

Language	Mapping	Sources
Chemehuevi	$V_1V_2\# \rightarrow V_1\# \rightarrow \#$	Press 1979 UC Pub Ling 92, §1.33.
Chukchee	$\#CCV \rightarrow \#CCV \rightarrow \#CC'$ [underlying ´ can trigger harmony]	Spencer 1999 citing Bogoraz 1922
Egyptian Arabic	$V:h\# \rightarrow V:\# \rightarrow V\#$	Michael Becker p.c. 2002
English (1)	$\begin{matrix} h & h & h \\ p & t & k \end{matrix} \rightarrow p & t & k \rightarrow b & d & g$	
English (2)	$alt' \rightarrow alR' \rightarrow a\check{R}'$	Thomas 2000 <i>JPhonet.</i>
English (3)	$nIs \rightarrow ns \rightarrow nts$ (doubtful)	Donegan & Stampe 1979 Dinnsen (ed.), <i>Current Approaches to Phonol. Theory</i> ,
English (4)	$ald \rightarrow a\check{t} \rightarrow alt$	B. L Anderson (1999), NWA 28.
Etxarri Navarrese Basque (similar processes in other W. Basque varieties)	$e \rightarrow i \rightarrow i^y$ $o \rightarrow u \rightarrow u^w$	Kirchner 1995, citing de Rijk 1970 <i>Fontes Lg. Vasconum</i> 2(5):149-167
Finnish	$pp\ tt\ kk \rightarrow p\ t\ k \rightarrow v\ t\ \emptyset$ (complex environment)	Jensen & Stong-Jensen in Koutsoudas 1976 (ed.) <i>Application and Ordering...</i>
Hellendoorn Dutch	$ktn \rightarrow kn \rightarrow kN$	van Oostendorp 2002 "Morphological recoverability"
Hidatsa	$V_1V_2\# \rightarrow V_1\# \rightarrow \#$	Kenstowicz & Kisseberth 1977:178f. citing Harris 1942
Icelandic	$aCr\# \rightarrow aCur\# \rightarrow \text{ö}Cur\#$	Kenstowicz 1994:79–81.
Irish	$ptk \rightarrow fhx \rightarrow \text{ø}h?$ (RotB for $x \rightarrow ?$ )	Gnanadesikan 1997:189ff. citing Ní Chiosáin 1991 diss.
Japanese	$...togi \rightarrow ...toNi \rightarrow doNi$	McCarthy 1999 citing Itô & Mester 1997
Karok	$V:: \rightarrow V: \rightarrow V$	Bright 1957 UC Pub Ling 13 §§321, 331
Lena Spanish	stressed $i \rightarrow e \rightarrow a$ before $u$	Gnanadesikan 1997 diss, citing Hualde 1989 <i>Linguistics</i> art.
Misantla Totonac of Yecuatla	Syllable-finally, $u(:)L, i(:)L \rightarrow u(:)l, i(:)l \rightarrow O(:)l, e:(l)$ . [L = belted L, O = open o]	MacKay 1994 IJAL §§3.1.2, 4.3.2
Mwera	$mp \rightarrow mb \rightarrow m$	Kenstowicz & Kisseberth

Language	Mapping	Sources
		1977:157 citing Harries 1950
Mohawk	...VC?# → ...'VCe? → ...VC'e?	Halle & Clements 1983:121–123 citing Postal
Nzebi	a → E → e → i; ç → o → u	Kirchner 1996 citing Guthrie 1969 <i>J Afr Lgs</i> 7(2):101-129
Nzema	nt → nd → nn	Clopper 2001 IULCWP 1
Ojibwa	nk → N → unknown	McCarthy 1999 citing Kaye 1974
Palauan	u: → u → '	Zuraw in press AFLA 8
Pero	i → E → a	Frajzyngier 1989:42-43.
Pipil	VwV{C/#} → Vw{C/#} → Vh{C/# }	Campbell 1985:34
Polish	k̂ k'i tSi	Lubowicz 2002 citing Rubach 1984:151–161.
Sanskrit	ai → e: → unknown au → o: → unknown	Gnanadesikan 1997 diss., citing Gonda 1966 ref grammar
Santiago Tzutujil	V?C? → V:C? → VC?	Dayley 1985 UC Pub Ling 107:44–45, 50
Sea Dyak	Nga → Na → Na)	Kenstowicz & Kisseberth 1979:298
Serbo-Croatian (1)	V(C)l# → V'(C)o# → V(C)o'#	Kenstowicz 1994:90–94
Serbo-Croatian (2)	VCC# → V'CaC# → VCa'C# (2 <sup>nd</sup> C +son)	Kenstowicz 1994:90–94
Southeastern Pomo	Ci → iC → eC (doubtful)	Moshinsky 1974 UC Pub Ling 72 §§3.2., 3.3.11, 3.3.13
Tarascan	ae → ee → e	Foster 1968 UC Pub Ling 56 §131
Toba Batak	nt → tt → ?t	Pater 1996/1999:16, citing Hayes 1986.
Tümpisa (Panamint) Shoshone	V → V?V → VV (very doubtful)	Dayley 1989 UC Pub Ling 115 §§ 9.3.5–6
Wikchamni Yokuts (1)	i: → e → unknown	Gamble 1978 UC Pub Ling 89 §158
Wikchamni Yokuts (2)	o...i → u...i → u...u	McCarthy 1999 citing Archangeli & Suzuki 1997:218ff.
Wintu (1)	rh → θ → unknown	Pitkin 1984 UC PUB Ling 94

Language	Mapping	Sources
		§321; Laura Wilbur IUWPL 1
Wintu (2)	$\epsilon C C a \rightarrow \epsilon C a \rightarrow i C a$	Pitkin 1984 UC PUB Ling 94 §§310, 321
Yagua	$V_1 h V_2 \rightarrow V_1 V_2 \rightarrow V_2 V_2$	Payne & Payne 22.2.3 in Darbyshire & Pullum 1986 <i>Hdbk</i>
Yawelmani Yokuts (1)	$u:-a \rightarrow o:-a \rightarrow o:-o$	Newman 1944, Archangeli 1988 diss.; McCarthy 1999
Yawelmani Yokuts (2)	$i\tilde{\rightarrow} e/e\tilde{\rightarrow} a/a\tilde{\rightarrow}$	McCarthy 1999 citing Kenstowicz & Kisseberth 1979:91ff

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